

**CLAIMS:**

1. Silicon nitride mould parts, particularly crucibles for use in connection with directional solidification and pulling of silicon single crystals,

5 characterized in that the mould parts consist of  $\text{Si}_3\text{N}_4$  having a total open porosity between 40 and 60% by volume and where more than 50% of the pores in the surface of the mould parts have a size which is larger than the mean size of the  $\text{Si}_3\text{N}_4$  particles.

10 2. Mould parts according to claim 1, characterized in that the mould parts are coated with silicon nitride particles having an average particle size of less than 50 $\mu\text{m}$ .

15 3. Method for the production of silicon nitride mould parts, particularly crucibles for use in connection with directional solidification of silicon, where particulate silicon having a particle size of less than 100 $\mu\text{m}$  is formed to a mould part and subjected to nitridation for conversion of the silicon particles to  $\text{Si}_3\text{N}_4$ , characterized in that the forming is carried out under such a pressure and with such a particle size distribution of the silicon particles that 20 the finished silicon nitride mould part has an open porosity between 40 and 60% by volume and where more than 50% of the pores in the surface of the finished mould part are greater than the mean size of the  $\text{Si}_3\text{N}_4$  particles.

25 4. Method according to claim 3, characterized in that the shaping of the mould parts from the silicon particles is carried out at a pressure of below 200 Mpa.

5. Method according to claim 3, characterized in that the shaping of the mould parts are carried out using vibration.